Amendments to the Specification

Applicant hereby amends the specification as requested by the Examiner, also including the full priority information on page 1.

On page 1, lines 5 – 10, please replace the text with the following:

This application is continuation of U.S. Application Ser. No. 09/665,544, filed on September 19, 2000, now US Patent 6,335,824, which is a continuation of PCT application PCT/US99/06097, filed on March 19, 1999, which is a continuation in part of U.S. application Ser. No. 09/045,547, filed Mar. 20, 1998, entitled Wide Field of View and High Speed Scanning Microscopy, now US Patent 6,201,639, and of U.S. application Ser. No. 09/170,847, filed Oct. 13, 1998, of the same title, now US Patent 6,185,030, which are both hereby incorporated by reference.

On page 23, lines 8 – 29, please replace the text with the following:

FIG. 4, a magnified view of portions of FIG. 3, shows primarily the oscillating arm assembly. In a symmetrical construction counterweight 20 has approximately the same mass as the aspheric micro lens 18, and counterweight 20a has the same mass as mirror 17, both counterweights being disposed the same distance on the opposite side of the axis of rotation A from the elements 17 and 18 that they counter balance. In non-symmetrical constructions, the masses of the counter weights may be different, with different distances, selected to achieve the counterbalanced condition, or other balancing techniques may be employed.

As shown in FIGS. 4A and 4B, the stationary arm 14, extending over microscope slide 2, delivers light to the stationary mirror 21 at the center of rotation A of the oscillating arm. The light is reflected upwards along axis of rotation A to mirror 15 on the rotating assembly. The light proceeds radially along path 16 to mirror 17 which

direct the beam down along axis A' to the micro lens 18. The top view FIG. 4A shows the micro lens 18 in plan.

On page 31 line17 through page 32 line 22, please replace the text with the following:

In other preferred embodiments, auto focus techniques as described in U.S. patent application Ser. No. 09/079,790, filed May 15, 1998, now US Patent 6,262,838, are employed. The disclosure of that application is hereby incorporated by reference.

Control System

FIG. 9 is an overall electrical block diagram of the control system for the microscope of FIG. 3. (With minor changes as will be obvious from the further discussion, the same system is useful for the embodiments of FIGS. 11 and 12).

Motherboard 64 of a personal computer holds a digital signal processor board 65 which processes the signal from the photosensors and a real time control computer board 66 which controls the galvanometer or other driver, the stepper motors and other sensors and actuators within the system. The electronics 67, 76 for driving the limited rotation motor 4, the electronics 68, 77 for driving the stepper motor 13 and the linear actuator 93 are also shown, as are electronics 69, 78 for miscellaneous functions. The personal computer mother board 64 also contains circuitry and connections for supporting standard computer peripherals, namely a monitor 70, a keyboard 71, a mouse 72, a hard disk 73, and a floppy disk 74. Also shown are six photosensor amplifier circuits 75 for the three colors of light, both as sampled directly from the emitting lasers, and as detected following exposure to the object being examined. Block 67 generates a triangular wave for driving the limited rotation motor. Its signal goes to a servo control board 76 which applies power to the limited rotation motor and processes the feedback signal from the angular position transducer. The controller for the stepper motor 143 and the linear actuators 93 referred to as block 68 feeds low level signals to a power amplifier board 77 which provides the power signals for driving these various motors and actuators. Similarly, the miscellaneous block 69 provides low level signals to

a higher power board 78. Spare slots are provided for additional capabilities such as an Ether Net communication link.

On page 40 lines 1 - 31, please replace the text with the following:

For example, reading of fluorescence is done using conventional FITC labeling, by illuminating the object with light of about 494 nm and collecting the low intensity fluorescing radiation of about 518 nm, the emitted light being separated from the excitation light with filters. For this purpose, FIG. 12, a dichroic beam splitter 94 is inserted in the laser beam. The dichroic beam splitter is selected to preferentially transmit the incident laser light and reflect the slightly longer fluorescing wavelength. A major advantage of this system concerns the high numerical aperture, e.g. NA=0.68, of the on-axis micro objective lens 18 with or without its associated stationary lens or lenses, shown in FIG. 13. A small part of the lens may be used to deliver the exciting illumination by departing from focus to generate a large spot diameter. The high numerical aperture then provides excellent collection of fluorescent light that is sent in all directions by the illuminated spot. The intensity of the fluorescing light in fluorescence microscopes may be ten orders of magnitude below the intensity of the incident laser light. The miniature lens not only collects the widely spread fluorescent light; due to it's high numerical aperture, it also converts the fluorescent light to a very nearly parallel beam. This alone, facilitates passage of the beam through the rotating arm, and, via the dichroic mirror, (in some cases in conjunction with a further collimating stationary lens FIG. 13,) to the stationary detection area. One or more interference filters 99 are provided before the photo multiplier detector 95 to detect extremely weak levels of fluorescent light.